EUROLIVE B212/B215

User's manual

GB

Version 1.1 May 2006

www.behringer.com

BEHRINGER®
JUST LISTEN.

IMPORTANT SAFETY INSTRUCTIONS

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CAUTION: To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this device near water.

6) Clean only with a dry cloth.

7) Be sure to mount your speakers on a solid, stable and level base or stand. Vibrating floors do not provide reliable support for speaker enclosures or stacks.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Only use attachments/accessories specified by the manufacturer.

10) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the device. When a cart is used, use caution when moving the cart/device combination to avoid injury from stumbling over it.

11) Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, liquid has been spilled or objects have fallen into the device, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

12) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

WARNING

THIS EQUIPMENT IS CAPABLE OF DELIVERING SOUND PRESSURE LEVELS IN EXCESS OF 90 dB, WHICH MAY CAUSE PERMANENT HEARING DAMAGE.

EUROLIVE

500/600-Watt 2-Way PA Speaker System with 12"/15" Woofer and 1.75" Compression Driver

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- High-power 500/600-Watt 2-Way PA sound reinforcement speaker system for live and playback applications
- Ultra-compact and lightweight system delivers excellent sound even at extreme sound pressure levels
- Extremely powerful 12"/15" long-excursion driver provides incredible deep bass and acoustic power
- State-of-the-art 1.75" diaphragm compression driver for exceptional high-frequency reproduction
- Ultra-wide dispersion, large-format exponential/conical horn
- Overload-protection circuitry ensures optimal HF driver protection
- Versatile trapezoidal enclosure design allows different positioning:
  - Stand mounting with 35-mm pole socket
  - Tilts on its side for use as a floor monitor
- Ergonomically shaped handles for easy carrying and setup
- 2 professional speaker connectors (compatible to Neutrik® Speakon®) plus 1/4" jack connectors*
- High-quality components and exceptionally rugged construction ensure long life
- Conceived and designed by BEHRINGER Germany

B212/B215

* All trademarks mentioned belong to their respective owners and are not affiliated with BEHRINGER®

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FOREWORD

Dear customer,

welcome to the team of EUROLIVE users, and thank you very much for expressing your confidence in us by purchasing these PA loudspeakers.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to develop an outstanding PA system that offers a maximum in flexibility and performance through its impressive sound character and outstanding features. The task of designing our new B212/B215 certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass this benefit on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the B212/B215 possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

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1. INTRODUCTION

Thank you very much for expressing your confidence in BEHRINGER products by purchasing the EUROLIVE B212/B215. This extremely compact loudspeaker has been designed specifically for those applications in which space is a problem. The compact dimensions and the low weight as well as the option to mount the loudspeaker on a wall give this product maximum flexibility. The EUROLIVE B212/B215 is equipped with both 1/4" TS and pro-level speaker connectors (Neutrik® Speakon®-compatible), so that you can expand your set-up flexibly at any time. All of these features make this loudspeaker a high-quality and highly reliable companion on the road.

1.1 Before you get started

1.1.1 Shipment

Your B212/B215 was carefully packed at the assembly plant to assure secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

☞ **Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery. Otherwise, all claims for replacement/ repair may be rendered invalid.**

☞ **Please always use the original packaging to avoid damage due to storage or shipping.**

☞ **Never let unsupervised children play with the B212/B215 or with its packaging.**

☞ **Please dispose of all packaging materials in an environmentally friendly fashion.**

1.1.2 Initial operation

Your B212/B215 speakers are connected to a power amplifier using the speaker connectors located in the back. Please read ch. 4, "ADDITIONAL CONSIDERATIONS" and ch. 5, "APPLICATION EXAMPLES" to get important technical information and practical suggestions about use.

ATTENTION!

☞ **This loudspeaker is capable of producing extreme volumes. Please keep in mind that high sound pressures do not only temporarily damage your sense of hearing, but can also cause permanent hearing damage. Be careful to select a suitable volume at all times.**

1.1.3 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, our goal is to have it repaired as quickly as possible. To arrange for warranty service, please contact the retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (www.behringer.com/support).

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

2. CONNECTIONS

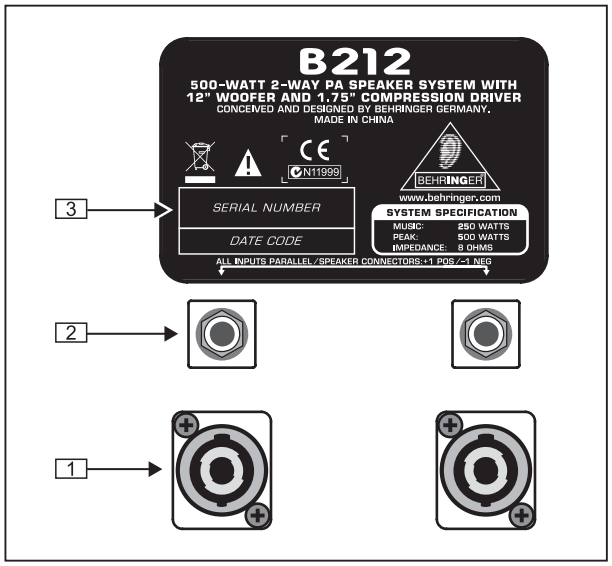

Fig. 2.1: Connections (B212 and B215)

1 The B212/B215 features two Neutrik® Speakon®-compatible speaker inputs which are wired in parallel. You can alternatively connect one of the connectors to the output on your power amp and tap into the signal from the amp once again on the second connector, in order to, for example, feed this signal into an additional loudspeaker. The pin designation of the speaker is pins 1+ and 1-.

☞ **ATTENTION: Never connect the output signals of different power amps to both parallel inputs at the same time. This may permanently damage your setup.**

2 The B212/B215 includes 2, parallel ¼" loudspeaker inputs. You can alternatively connect one of the connectors to the output on your power amp and tap into the signal from the amp once again on the second connector, in order to, for example, feed this signal into an additional loudspeaker.

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ATTENTION!

☞ **When several loudspeakers are wired in parallel the overall impedance Z_{ges} to be handled by the power amp can be calculated, as shown below, from the individual impedance values of the connected speakers:**

$$Z_{ges} = \frac{1}{1/Z_1 + 1/Z_2 + \ldots}$$

Your amplifier may be damaged if the actual impedance drops below its input impedance. Please make sure that the calcualted total impedance Z_{ges} is not smaller than the minimum impedance specified for your amplifier.

3 *SERIAL NUMBER*

3. OPTIMAL OPERATION

We have developed the B212/B215 for use in a wide range of possible applications. Of course, the sound of your loudspeakers depends on the acoustic characteristics of the room/space in which they are being used. The following chapters of this manual will give you information about getting the most out of your EUROLIVE speakers.

3.1 HF drivers

High frequencies are the segment of the audio spectrum responsible for clarity and speech intelligibility. These frequencies are the easiest ones to locate, but at the same time they are also the easiest ones to "obstruct." Therefore, we recommend positioning your speakers so that the HF drivers are located slightly above the height of the audience. This guarantees the best possible dispersion of high frequencies and considerably higher intelligibility.

3.2 How to prevent feedback

Always place the "front of house" speakers ahead of the microphones (from the audience's perspective), and never behind. Use professional floor monitors or an in-ear monitoring system to hear the stage performers.

3.3 How to avoid feedback when working with record players (DJ applications)

In applications with record players, bass feedback can occur. Bass feedback occurs when low frequencies get back to the pickup and are re-reproduced on the speakers. The most common causes for this are: speakers located too closely to the record player, a room with a wooden floor, or presence of a podium or a platform. In such cases, it is best to move the speakers away from the record player and "banish" them from the stage, so that they are located on firm ground. Another option is to use raised stands, which prevent the speakers from having a direct contact with the ground.

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3.4 Loudspeaker protection by using a low-cut filter

Try to prevent damage to your speakers caused by extreme oscillation of the bass membrane due to subsonic noise and extremely deep frequencies. Use an equalizer to cut off those frequencies that fall below your speakers' frequency range, or use a low-cut/high-pass filter. Most equalizers and sound-improvement systems offer a low-cut function, like the BEHRINGER ULTRAGRAPH DIGITAL DEQ1024, for example.

Using a low-cut filter in your signal path is particularly recommended if you use record players or CD players as your signal source. CD players often produce extremely deep frequencies, which can lead to extreme excursions of the bass membrane.

4. ADDITIONAL CONSIDERATIONS

4.1 Length and diameter of loudspeaker cables

Loudspeaker cables whose diameter is too small can considerably limit the power amp performance. The longer the cable, the more pronounced the problem. As a result, musicians often simply "turn up" the amp, which can lead to loudspeaker damage. Therefore, don't use cables longer than 15 m (45 ft.). For most applications, this will not be necessary. Cable diameter should be at least 2.5 - 4.0 mm^2.

4.2 Power amp rating

Selecting the right amp can turn out to be rather difficult. Therefore, stick to the following rule of thumb: the power rating of your amp should be roughly twice the speaker load capacity. A speaker rated at 200 Watts continuous performance can easily be powered by an amp rated at 400 Watts output power. An optimal addition to your speaker system would be the BEHRINGER EUROPOWER EP1500 power amp, for example.

4.3 Fuses

We do not recommend the use of fuses with audio applications. Damage to loudspeakers can be the result of high peak signals and high output power. However, fuses can only offer protection from one of these two factors, and never from both. Additionally, fuse resistors are sometimes nonlinear, leading to distortion and unpredictable overdriving.

4.3.1 Protecting your equipment

- ▲ Always try to find the optimal signal level. Try to avoid overdriving your amp.
- ▲ Keep in mind the physical limitations of your PA system.
- ▲ Use a limiter to restrict the output signal level. Place the limiter between the mixing console and the power amp. For this purpose, our proven AUTOCOM PRO-XL MDX1600, COMPOSER PRO-XL MDX2600 and MULTICOM PRO-XL MDX4600 compressors offer an outstanding solution. All models can be used as a limiter: the audio signal doesn't overdrive any more, and unpleasant "peaks" are effectively avoided.

☞ **Our ULTRADRIVE PRO DCX2496 and SUPER-X CX3400/ CX2310 crossovers are particularly well-suited for protecting your equipment: for each output, they have independent limiters.**

5. APPLICATION EXAMPLES

5.1 Full-range stereo operation

In the following example, the main output signal of a mixing console is connected to a power amplifier. Both the outputs and inputs are stereo. A B212/B215 is connected to each of the amp outputs, and these speakers reproduce the entire frequency range (a full range).

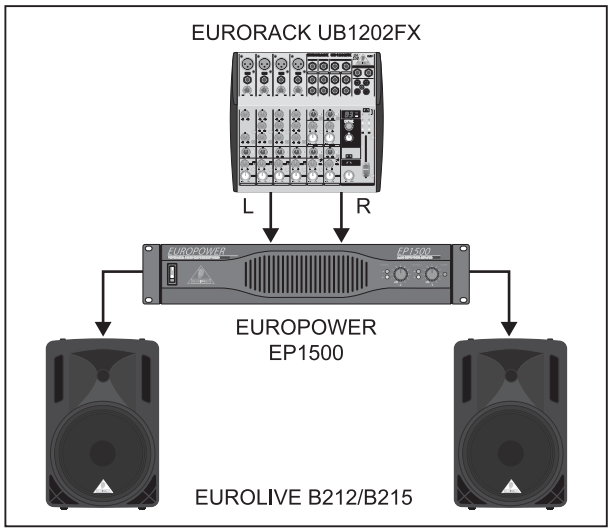

Fig. 5.1: Full-range stereo operation

5.2 Using several B212/B215 loudspeakers

For larger rooms, you can connect several B212/B215 speakers.

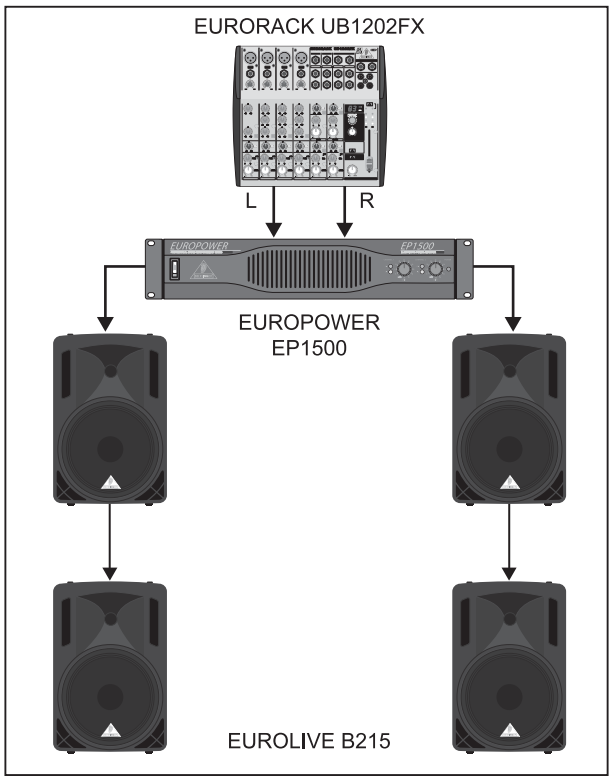

Fig. 5.2: Wiring several B212/B215 loudspeakers

5.3 Stereo operation with a subwoofer

Using a crossover, the main output signal of a mixing console is split into a stereo signal and a mono signal. The mono signal covers the lower frequency range and the stereo signal covers all other frequency ranges. Then, the stereo signal is connected to a stereo power amplifier. A B212/B215 is connected to each of the amp outputs. The mono subwoofer signal is connected to one channel of an additional power amplifier, which powers one E1800X subwoofer.

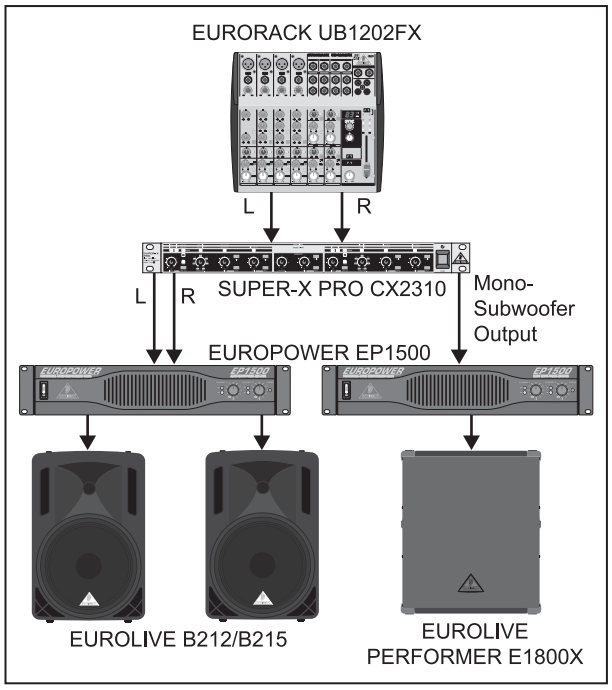

Fig. 5.3: Stereo operation with a subwoofer

6. INSTALLATION

The EUROLIVE B212/B215 features professional speaker connectors (compatible to Neutrik® Speakon®) that assure problem-free operation. The Speakon® connector was developed for loudspeakers with high power ratings. If it is connected into the corresponding plug, it locks into place and cannot accidentally be disconnected. It protects against electric shock and assures correct polarity. Each of the plugs only carries the assigned individual signal.

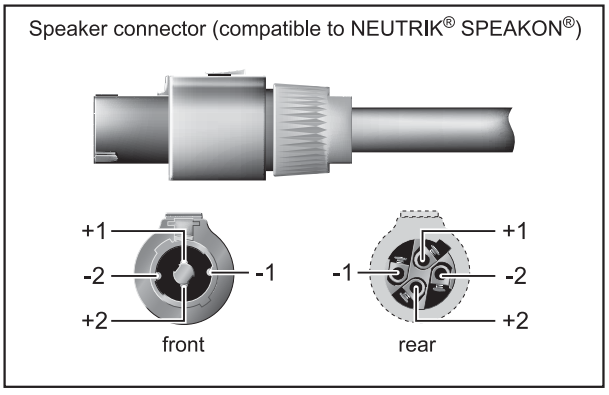

Fig. 6.1: Connector compatible to Neutrik® Speakon®

Please only use the commercially available Speakon® cables to connect your loudspeakers to the power amp. Verify the pin assignment of your loudspeakers and cables depending on the loudspeaker output you are using.

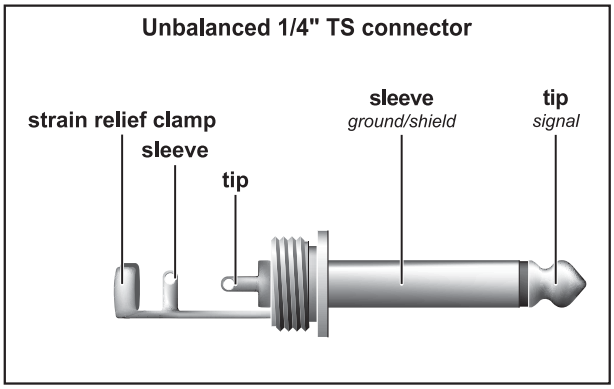

Fig. 6.2: 1/4" TS connector

7. SPECIFICATIONS

SYSTEM DATA

High-performance woofer	
B212:	12" (305 mm)
B215:	15" (381 mm)
Tweeter compression driver	
B212 and B215:	1.75" (44 mm)
Frequency range	
B212:	65 Hz to 18 kHz
B215:	55 Hz to 20 kHz
Power rating (Peak Program)	
B212:	500 W
B215:	600 W
Impedance	
B212 and B215:	8 Ω
Sensitivity (1 W @ 1 m)	
B212:	93 dB (Full Space)
B215:	95 dB (Full Space)
Dispersion	
B212:	90° x 60°
B215:	70° x 40°
Crossover frequency	
B212:	2.5 kHz
B215:	1.8 kHz

DIMENSIONS/WEIGHT

Dimensions (HxWxD)	
B212:	approx. 21 2/3" x 13 5/8" x 10 5/8" (approx. 550 mm x 345 mm x 270 mmm)
B215:	approx. 27 1/3" x 17 1/3" x 13 1/16" (approx. 695 mm x 440 mm x 335 mm)
Weight	
B212:	approx. 23.2 lbs. (approx. 10.5 kg)
B215:	approx. 39.7 lbs. (approx. 18.0 kg)

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.

8. WARRANTY

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§ 1 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

§ 2 ONLINE REGISTRATION

Please do remember to register your new BEHRINGER equipment right after your purchase by visiting www.behringer.com (alternatively www.behringer.de) and kindly read the terms and conditions of our warranty carefully.

Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently.

Thank you for your cooperation!

§ 3 WARRANTY

1. BEHRINGER (BEHRINGER International GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 5, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 4 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 5 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings, illuminants and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 6 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 7 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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Hanns-Martin-Schleyer-Str. 36-38, 47877 Willich-Münchheide II, Germany.
Tel. +49 2154 9206 0, Fax +49 2154 9206 4903